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$$\text{or } \frac{d\left(\frac{m}{r}\right)}{\sqrt{1-\left(\frac{m}{r}\right)^2}} = \frac{-\sqrt{c^2+\mu}}{c} d\theta. \dots\dots\dots(2)$$

Integrating (2) we find

$$c \left\{ \sin^{-1}\left(\frac{m}{a}\right) - \sin^{-1}\left(\frac{m}{r}\right) \right\} = \theta \sqrt{c^2 + \mu}$$

for the equation of the required path.

PROBLEMS.

20. It is required to circumscribe about a given parabola an isosceles triangle whose area shall be a minimum.—Communicated by A. W. MASON, Audenreid, Carbon County, Pa.

21. $ABCD$ is a quadrilateral; O , the intersection of the diagonals; P, Q , points in BD, AC , such that $QA = OC$ and $PB = OD$. Prove that the center of gravity of the quadrilateral coincides with that of the triangle OPQ .—Communicated by I. H. TURRELL, Cummins ville, Ohio.

22. Show that the distance from a vertex of any plane triangle to the points where the opposite escribed circle touches the sides meeting at that vertex is constant and equal to half the sum of the sides of the triangle.—Communicated by PROF. C. M. WOODWARD, St. Louis, Mo.

23. If the brightness of the moon be equal to the brightness of the clouds by day, show that the light of an overcast day is to that of a full moon-lit night as $8(360)^2 : \pi^2$; the diameter of the moon being 30'.—Communicated by PROF. JAS. NOONEY, New Haven, Conn.

24. There are m labels, to be distributed by lot among m different articles. Required the probable amount of coincidence in two independent allotments.—Communicated by PROF. PLINY EARLE CHASE, Haverford College, Pa.

EDITORIAL NOTES.

We have been obliged, for want of room, to defer publishing the solutions of Nos. 14 and 15 to our next issue. We regret that our limited space will not permit us to publish the elegant solution of No. 12 by Prof. Scheffer, and of No. 13 by Messrs. Greenwood and Martin.

We publish in this number a translation of a letter received from Prof. Schiaparelli in reply to Prof. Hall's article, on Comets and Meteors, published in No. 2, which we think will interest most of our readers. In a note to the editor, Prof. Hall writes: "It is not difficult I think to reply to the two propositions laid down by Prof. Schiaparelli, but as he fully concedes that the solution given by Laplace is practically correct, I have nothing more to say."